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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,431	06/14/2005	George Hoshi	040549	8396

23850 7590 01/09/2009

KRATZ, QUINTOS & HANSON, LLP
1420 K Street, N.W.
Suite 400
WASHINGTON, DC 20005

EXAMINER	
PRICE, CRAIG JAMES	
ART UNIT	PAPER NUMBER
3753	

MAIL DATE	DELIVERY MODE
01/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,431	HOSHI ET AL.	
	Examiner	Art Unit	
	Craig Price	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 10-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10-14* is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-7 and 10-14 are pending.

Claim Objections

2. Claim 7 is objected to under 37 CFR 1.75 as being a substantial duplicate of allowed claim 10. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 4/1, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (6,076,543) in view of Ikeda et al. (6,014,498) and further in view of Mittendorf (2,819,858).

Johnson discloses a fluid control apparatus comprising a plurality of lines (as shown in figure 10) arranged in parallel on a base member (42) and having inlets, as well as outlets, facing toward the same direction, each of the lines comprising a plurality of fluid control devices (44,46,48) arranged in an upper stage and a plurality of block coupling members (77,78,80) arranged in a lower stage, and a space, with the line support member removably attached (using 106) to the base (98), a space for positioning the tape heater holding clip therein being provided in each of locations between adjacent fluid control devices and the base member in the form of a frame comprising a plurality of lateral rails (72, shown in Figure 4), the width of which extends in a direction orthogonal to the lines as shown in figures 2-10.

Johnson has disclosed all of the features of the claimed invention although is silent as having the fluid control apparatus being characterized in that at least one of the lines is provided on each of opposite sides thereof with a tape heater, the tape heaters being held from opposite sides thereof to block bodies of the fluid control devices with a resilient force acting to reduce the spacing between the opposed walls of the clip, the line provided with the heaters being mounted on a line support member removably attached to the base member, and a tape heater holding clip being of an inverted U-shape with flat opposed walls and being removably attached to the tape heater.

Ikeda et al. discloses a device which teaches a system having the fluid control apparatus being characterized in that at least one of the lines is provided on each of opposite sides thereof with a tape heater (11) to block bodies of the fluid control devices.

Mittendorf discloses a heater being held from opposite sides thereof to the line by the clip (figures 2-4), the clip being an inverted U shape made of from a thin metal plate, and having flat opposed walls (the inner walls of 12 between the tabs 19) and being removably attached to the tape heater.

It would have been obvious to one of ordinary skill in the art at the time of invention to employ a tape heater as taught by Ikeda et al. into the device of Johnson to have the fluid control apparatus being characterized in that at least one of the lines is provided on each of opposite sides thereof with a tape heater to block bodies of the fluid control devices, in order to prevent condensation and for preventing the re-liquification of a gas as converted from a fluid which is in the form of a liquid at room temperature (Col.1, Lns. 5-10).

Furthermore, It would have been obvious to one of ordinary skill in the art at the time of invention to employ a clip as taught by Mittendorf into the device of Johnson and Ikeda et al. to have the tape heaters being held from opposite sides thereof to block bodies of the fluid control devices with a resilient force acting to reduce the spacing between the opposed walls of the clip, the line provided with the heaters being mounted on a line support member removably attached to the base member, and a tape heater holding clip being of an inverted U-shape with flat opposed walls and being removably

attached to the tape heater, in order to hold the heater closely to the surface thereby assuring good heat transfer (Col.2, Lns. 61-66).

Regarding claim 6, the heater tape would be in contact with the block coupling members in as much in the same manner as applicant's device is shown.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson '543, Ikeda et al. '498 and Mittendorf '858 and further in view of Lengstorf (3,733,459).

Johnson, Mittendorf, and Ikeda et al. have disclosed all of the features of the claimed invention although are silent to the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore.

Lengstorf discloses a device which teaches the use of a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore as shown in figure 3. It would have been obvious to one of ordinary skill in the art at the time of invention to employ Lengstorf's heater into the device of Johnson, Mittendorf and Ikeda et al. to have the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore, in order to enable use during subfreezing conditions (Col.1, Lns. 3-6).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson '543 and Lengstorf (3,733,459).

Johnson discloses all of the features of the claimed invention including wherein each of the coupling members is slidably mounted on the line support member, and

each of the fluid control devices is mounted on at least two adjacent coupling members, and each of the lines comprising a plurality of fluid control devices (44,46,48) arranged in an upper stage and a plurality of block coupling members (77,78,80) arranged in a lower stage, and a space, with the line support member removably attached (using 106) to the base (98) member, although is silent in having the line support member having a heater insertion bore formed therein and extending longitudinally thereof, a sheath heater being inserted into the bore without insulating material and the base member in the form of a frame comprising a plurality of lateral rails (72, shown in Figure 4) extending in a direction orthogonal to the lines as shown in figures 2-10.

Lengstorf discloses a device which teaches the use of a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore as shown in figure 3. It would have been obvious to one of ordinary skill in the art at the time of invention to employ Lengstorf's heater into the device of Johnson and Ikeda et al. to have the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore without insulating material, in order to enable use during subfreezing conditions (Col.1, Lns. 3-6).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to remove the insulating material from the heater, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art.

7. Claims 2, 3, 4/3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson '543 and Ikeda et al. '498 and further in view of Lengstorf (3,733,459).

Johnson and Ikeda et al. have disclosed all of the features of the claimed invention, including each of the lines comprising a plurality of fluid control devices (44,46,48) arranged in an upper stage and a plurality of block coupling members (77,78,80) arranged in a lower stage, and a space, with the line support member removably attached (using 106) to the base (98), although are silent to the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore without insulating material, and the base member has a plurality of lateral rails made of a nonmetallic material and extending in a direction orthogonal to the lines.

Lengstorf discloses a device which teaches the use of a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore, and the base member (32) has a plurality of lateral rails made of a nonmetallic material and extending in a direction orthogonal to the lines as shown in figures 2 and 3. It would have been obvious to one of ordinary skill in the art at the time of invention to employ Lengstorf's heater into the device of Johnson and Ikeda et al. to the line support member has a heater insertion bore formed therein and extending longitudinally thereof, and a sheath heater is inserted into the bore without insulating material, and the base member has a plurality of lateral rails made of a nonmetallic material and extending in a

direction orthogonal to the lines, in order to enable use during subfreezing conditions (Col.1, Lns. 3-6).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to remove the insulating material from the heater, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art.

Allowable Subject Matter

8. Claims 10-14 are allowed.

Response to Arguments

9. Applicant's arguments with respect to claims 1-7 have been considered but are not persuasive.

Applicant's argue the rejection for claim 1 by stating that the cited patents do not teach a plurality of lateral rails extending in a direction orthogonal to the lines, when Johnson et al. clearly disclose this as shown best in Figure 4, when considering 72 on both sides of the longitudinal slots as being rails.

Applicant's argument that Mittendorf does not hold the tape heater to the block body of the fluid control device is not persuasive, when certainly this is taught by Ikeda et al. Applicant's argument with respect to the shape of the clip of Mittendorf as not being U-shaped is not persuasive, as the clip shown by Mittendorf is interpreted in the broadest reasonable interpretation as having a U-shaped clip.

Applicant's request the rejection for claim 2 be reconsidered relative to the use of a support member having a heater insulation bore along the length thereof and a sheath heater inserted in the bore without insulation. The limitation is written in a manner which permits that the heater is installed in a bore which does not have insulation, in which the heater comprises the insulation that channels heat from the element to the valve (Col. 3, Lns. 30-34) which is inserted into a bore that does not have insulation.

Regarding the argument concerning claim 2, that Lengstorf does not have the structure composed of "an upper stage, a lower stage, a line support member and a base member", these components are disclosed by Johnson, see pages 2 and 3 of the previous action. The Johnson et al. reference discloses each of the lines comprising a plurality of fluid control devices (44,46,48) arranged in an upper stage and a plurality of block coupling members (77,78,80) arranged in a lower stage, and a space, with the line support member removably attached (using 106) to the base (98).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Price whose telephone number is (571) 272-2712. The examiner can normally be reached on 7AM - 5:30PM M-R, Increased flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CP 31 December 2008 /Stephen M. Hepperle/
Primary Examiner, Art Unit 3753

/C. P./
Examiner, Art Unit 3753